

Bulk Diesel Mobile Filtration Units

Bulk Diesel Mobile Filtration Units

Mobile units provide a fuel filtration solution that address the particulate contamination and water removal in an easy to use package. Because of its mobility, it can be deployed in remote sites or moved between different bulk diesel storage tanks on a facility site.

Bulk Diesel Tanks where contaminated diesel fuel is left in a tank, can jeopardize all of the effort that were put in cleaning the fuel prior to filling up the tank. Over time, fuel in bulk diesel storage tanks can ingress particulate and water contamination from the environment.

Water, over time, results in organic growth such as bacteria and/or fungus. Bacteria or fungus can cause effects similar to free water on fuel systems. This includes rust, corrosion or emissions problems. The effects can be accelerated as the fuel ages and the level of acidity and oxidation can be shown with the Total Acid Number TAN (mg KOH/g) Acid Number. These contaminants may also coat the water in fuel sensors in a system and prevent the proper detection of water.



Natural Gas Drilling Site Example

A bulk diesel fuel storage tank on a remote Natural Gas Drilling site, used to fuel the generator was found with heavy sludge buildup. The sludge and dirt caused loss of production (generator not running) and damage to diesel engine components totaling over \$100,000 in lost production in one hour.

Due to the severe contamination, the fuel was pumped into another, clean tank by the BDC bulk diesel filter cart and cleaned in a single pass. With

this single pass. Particulate and free water were removed in one step. The first stage Bag Filter on the BDC was ideal for the gross removal of microbial bloom/growth, rust and large particulates from the fuel. With the addition of a bag housing, the BDC can handle the high dirt loads often found in on-site service tanks.

After the original tank was emptied, the sludge at the bottom of the tank (pictured) was removed and the tank was throughly cleaned to have it ready for the next delivery of fuel. To maintain a clean tank and clean fuel, the BDC is ideal as a kidney loop system that polishes the fuel on a regular basis or can be permanently installed.



BDC

Fuel Contamination types:

Contamination Type:	Sources	Effects	Solutions
Particulates:	 Contaminated fuel delivery Missing tank breather Tank corrosion Dirt left from tank installation 	Wear and tear of diesel engine componentsPremature failure	 Fuel Filtration Periodic tank cleaning/fuel polishing Add desiccant breathers Filtration at each stage of fuel movement
Water:	Contaminated fuel deliveryCondensationLeaks and outside influences	 Engine combustion and/or injector problems Corrosion Clogged/saturated filters Organic/Biological growth 	 Fuel Filtration Close any openings on tank Periodic tank cleaning/fuel polishing
Organic Growth:	■ Generated by presents of water and air	Clogs filters, engine partsIncreased TAN number (corrosive effect)	 Periodic tank cleaning/fuel polishing Prevent water from entering tank Use desiccant breathers

Bulk Diesel Filter Cart

*Coalescing Elements Patent-Pending

BDFC

Applications







LINIOADING





HIGH-FLOW FUEL

Application Introduction:

The BDFC is ideal for those wanting to maintain clean fuel in their bulk storage tanks. The new BDFC provides exceptional particulate filtration and continuous water removal with higher flow rates. The GHPF particulate pre-filter and GHCF coalescing water removal filters feature Schroeder Industries' GeoSeal® patented aftermarket solution, ensuring quality replacement elements are used with every element change. These elements use the fully synthetic Excellement Z-Media® and revolutionary coalescing media to fully protect vital diesel engine components from debris and water.

Features and Benefits

- Designed with integrated particulate removal pre-filtration for maximum coalescing filter element life in the downstream housing
- Routine element change only needed on GHPF particulate filter, keeping operating costs low
- Patented GeoSeal® elements designed to provide consistent quality with the highest single-pass water and particulate removal efficiencies in today's ultra-low sulfur diesel (ULSD) fuels
- All-aluminum filter housings and plumbing components are fully compatible with diesel and biodiesel
- Sight glass, Y-strainer, and upstream/downstream test points included
- 15' clear suction hose and rubber discharge hose with cam-and-groove connections and 3' wands
- At just under 28" wide, this cart will fit through standard doorways
- Electric motor includes 120VAC with resettable overload and 7' power cord
- Latching, resettable pressure indicators trip at 5 psi before bypass valve cracking, providing early warning to the operator of when to change the filter element



Model no. of filter in photograph is: BDFC11GGZ3CG5VD525

Markets





POWER GENERATION



MOBILE **VEHICLES**



COMMON RAIL INJECTOR SYSTEMS



MARINE



FLEET



MINING **TECHNOLOGY**



RAILROAD



AGRICULTURE



BULK FUEL FILTRATION

14 or 25 gpm | CF

53 or 95 L/min

BDFC



BDFC Bulk Diesel Filter Cart

Filter Housing Specifications

Flow Rating: Electric Motor Option: 14 gpm or 25 gpm (53 L/min or 95 L/min) Air Operated Option: 16 gpm or 25 gpm (61 L/min or 95 L/min)

Ambient Environment

Temperature Range: -20°F to 104°F (-29°C to 40°C)

Bypass Indication: Particulate Filter **Coalescing Filter**

> Electric Motor: 35 psi (2.4 bar) Electric Motor: 35 psi (2.4 bar) Air Operated: 25 psi (1.7 bar) Air Operated: 15 psi (1.0 bar)

Particulate Filter Bypass Valve Cracking: **Coalescing Filter**

> Electric Motor: 40 psi (2.8 bar) Electric Motor: 40 psi (2.8 bar) Air Operated: 30 psi (2.1 bar) Air Operated: 20 psi (1.4 bar)

Materials of Construction: Particulate Filter **Coalescing Filter**

> Head: Cast Aluminum, Anodized Head: Cast Aluminum, Anodized Element Case: Aluminum, Anodized Element Case: Aluminum, Anodized Sump: Cast Aluminum, Anodized

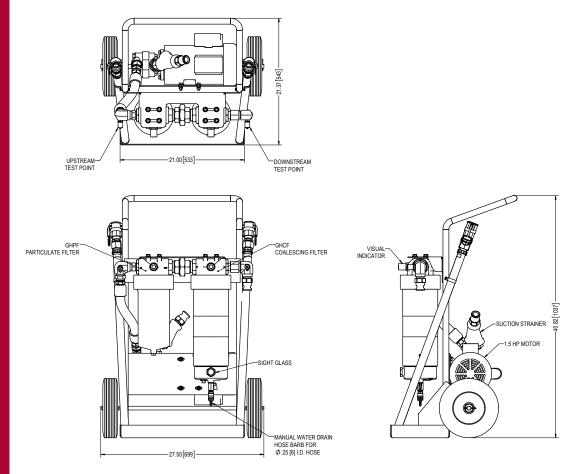
Weight: 131 lbs. (59.4 kg)

Standard Operating 60 Hz, Single Phase Frequency & Phase:

Full Load Amperage 13.4 A @ 115 VAC @ Operating Voltage: 7.2-6.7 A @ 208-230 VAC

Service Factor Amperage 15.2 A @ 115 VAC @ Operating Voltage: 8.1-7.6 A @ 208-230 VAC

Dimensions



Metric dimensions in []. Dimensions shown are inches [millimeters] for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.

Bulk Diesel Filter Cart BDFC



Filtration Ratio per ISO 16889

Using APC calibrated per ISO 11171

Particulate Elements	DHC	$\boldsymbol{\beta}_{x}$ (c) ≥ 200	β_x (c) ≥ 1000
11GGZ1V	172 grams	<4.0	4.5
11GGZ3V	148 grams	4.6	5.8

Coalescing Element	Pressure Side Coalescing		
	Max Flow	Single Pass Water Removal Efficiency	
C125GZ5V	25 gpm	≥ 95%	

Note:

Based on ULSD15 with 27 Dynes/cm surface tension and 0.25% (2500 ppm) water injection

Particulate Element

Flow Direction: Outside In

Element Nominal Dimensions: 5.0" (27 mm) O.D. x 11" (279 mm) long

Coalescing Element

Flow Direction: Inside Out

Element Nominal Dimensions: 5.0" (27 mm) O.D. x 12" (305 mm) long

Notes	

Element Particulate Performance Information_{BDA}

Element Water **Coalescing Performance** Information Particulate and Coalescing **Elements Sold** with Cart

Highlighted product eligible for wickbelivery

BDFC



Bulk Diesel Filter Cart

Filter Model Number Selection

Highlighted product eligible for wickDelivery

How to Build a Valid Model Number for a Schroeder BDFC Supplied with Elements: BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6 BDF Example: NOTE: One option per box BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6 BOX 8 11GGZ3 25 **BDF** CG5 ٧ D5 = BDFC11GGZ3CG5VD525 BOX 2 BOX 4 BOX 1 BOX 3 **Filter Series** Configuration **Particulate Filtration Coalescing Filtration** CG5 = C125GZ5V Coalescing Element BDF C = Filter Cart $11GGZ1 = 1 \mu m$ $11GGZ3 = 3 \mu m$

BOX 5	BOX 6	BOX 7
Seal Material	Dirt Alarm®	Options
V = Viton®	D5 = Visual Pop-Up; Manual Reset	Omit = Included Sight Glass, Y-Strainer & Upstream / Downstream Test Points
		I = Water-In-Fuel (WIF) Sensor w/ Indicator Light
	BOX 8	

16A = 16 gpm Air Driven

25A = 25 gpm Air Driven

25 = 25 gpm 120VAC 60 Hz Single-Phase

NOTES:

For 50Hz applications, contact factory

14 = 14 gpm 120VAC 60 Hz Single-Phase

Box 5. Viton® is a registered trademark of DuPont Dow Elastomers

Pump Sizing and Configuration

Box 7. "I" option is only available with electric motor configurations

Element Part Number Selection

Highlighted product eligible for Quick Delivery

Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171

Particulate Elements	DHC(g)	β_{x} (c) ≥ 200	β_{x} (c) ≥ 1000
11GGZ1V	172	<4.0	4.2
11GGZ3V	148	<4.0	4.8

Coalescing Element	Pressure Sid	de Coalescing
	Max Flow	Single Pass Water Removal Efficiency
C125GZ5V	25 gpm	≥ 95%

Note:

Based on ULSD15 with 27 Dynes/cm surface tension and 0.25% (2500) water injection

Particulate Element

Flow Direction: Outside In

Element Nominal Dimensions: 5.0" (27 mm) O.D. x 11" (279 mm) long

Coalescing Element

Flow Direction: Inside Out

Element Nominal Dimensions: 5.0" (27 mm) O.D. x 12" (305 mm) long

Fluid Compatibility

Fuel Oils

- ULSD15, low sulfur diesel and high sulfur diesel
- Biodiesel blends
- Synthetic diesel and blends
- No. 2 fuel oil and heating oil

BDFP

14 or 25 gpm | CF

53 or 95 L/min

Applications







LINIOADING





HIGH-FLOW FUEL

KIDNEY LOOP

Application Introduction:

A simple turn-key stationary fuel filtration system

The BDFP provides a simple turn-key stationary fuel filtration system for exceptional fuel transfer, polishing, and dispensing applications. Both filters combine Schroeder's fully synthetic Z-Media® in a particulate pre-filter, the GHPF, with our patent-pending coalescing water removal filter, the GHCF, to fully protect vital diesel engine components from dirt and water. The BDFP provides premium filtration in a simple system which can easily be integrated into new and existing fuel storage systems.



Features and Benefits

- Turn-key coalescing and filtration system, for use as a fuel transfer, polishing, and dispensing solution
- Incorporates high-efficiency particulate and water removal filtration into a stationary mounted system with pump
- Available with either electrical or air operated pump options for more system flexibility
- GHPF and GHCF filter housings use patented GeoSeal® elements
- All-aluminum filter housings are fully compatible with diesel and biodiesel
- Minimal clearance needed for element service, ideal for enclosure installations
- Routine element change only needed on GHPF particulate filter, reducing operating cost
- Patent-pending, three-phase particulate, coalescing and fuel/water separation media technology
- A revolutionary element designed for the highest single-pass water and particulate removal efficiencies in today's ultra-low sulfur diesel (ULSD) fluids
- Protects expensive Tier III and Tier IV engine components against failures caused by particulate and water transferred from the fuel storage tanks to the equipment
- Allows users to achieve or exceed the particulate and water removal specifications of the injection system OEMs

Model no. of filter in photograph is: BDFP11GGZ3CH5VD514

Markets





MOBILE



MARINE







RAILROAD



BULK FUFI **FILTRATION**





GENERATION



VEHICLES



COMMON RAIL INJECTOR SYSTEMS



FLEET









Filter Housing Specifications

Flow Rating: Electric Motor Option: 14 gpm or 25 gpm (53 or 95 L/min)

Air Operated Option: 16 or 25 gpm (53 or 95 L/min)

Ambient Temperature Range: 32°F to 104°F (0°C to 40°C) Standard; -20°F to 140°F (-29°C to 40°C) Heater Option

Bypass Indication: Particulate Filter **Coalescing Filter**

> Electric Motor: 35 psi (2.4 bar) Electric Motor: 35 psi (2.4 bar) Air Operated: 25 psi (1.7 bar) Air Operated: 15 psi (1.0 bar)

Bypass Valve Cracking: Particulate Filter **Coalescing Filter**

> Electric Motor: 40 psi (2.8 bar) Electric Motor: 40 psi (2.8 bar) Air Operated: 30 psi (2.1 bar) Air Operated: 20 psi (1.4 bar)

Materials of Construction: Particulate Filter **Coalescing Filter**

> Porting Head: Cast Aluminum, Anodized Porting Head: Cast Aluminum, Anodized Element Bowl: Aluminum, Anodized Element Bowl: Aluminum, Anodized Sump: Cast Aluminum, Anodized

Weight: 130 - 150 lbs. (59 - 68 kg)

Element* Change Clearance: GHPF: 2" (51 mm)

GHCF: 4" (102 mm)

Operating Frequency: 60 Hz

Operating Phase: Single

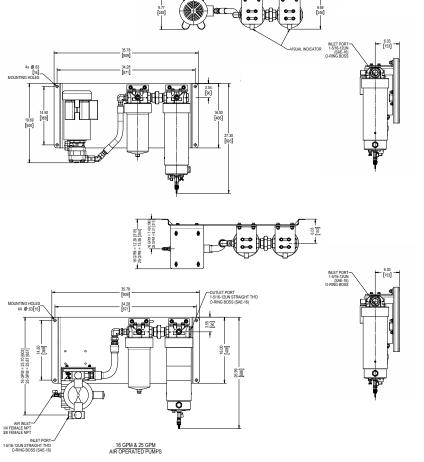
Full Load Amperage 13.4 A @ 115 VAC @ Operating Voltage: 7.2-6.7 A @ 208-230 VAC

Service Factor Amperage 15.2 A @ 115 VAC @ Operating Voltage: 8.1-7.6 A @ 208-230 VAC

*Elements sold with the filter system

Electric Motor **Option**

Air **Operated Option**



Dimensions shown are inches [millimeters] for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.



Filtration Ratio per ISO 16889

Using APC calibrated per ISO 11171

Particulate Elements	DHC(g)	β_{x} (c) ≥ 200	β_x (c) ≥ 1000
11GGZ1V	172	<4.0	4.2
11GGZ3V	148	<4.0	4.8

Coalescing Element	Pressure Side Coalescing		
	Max Flow	Single Pass Water Removal Efficiency	
C125GZ5V	25 gpm	≥ 95%	

Note:

Based on ULSD15 with 27 Dynes/cm surface tension and 0.25% (2500 ppm) water injection

Particulate Element

Flow Direction: Outside In

Element Nominal Dimensions: 5.0" (27 mm) O.D. x 11" (279 mm) long

Coalescing Element

Flow Direction: Inside Out

Element Nominal Dimensions: 5.0" (27 mm) O.D. x 12" (305 mm) long

Notes	

Element Particulate Performance Information BDA

Element
Water
Coalescing
Performance
Information
Particulate and
Coalescing
Elements Sold

Highlighted product eligible for wickDelivery

with System

BDS3

LVH-F

LVH-C

BDFC

BDFP

BDC

HDPD

BCC



Filter Model Number Selection

Highlighted product eligible for wickbelivery

NOTES:

For configurations not listed, please contact factory

Box 3. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 7. Only box that will allow a combination of

Element Part Number Selection

Highlighted product eligible for wick Delivery

How to Build a Valid Model Number for a Schroeder BDFP Supplied with Elements: BOX 2 BOX 3 BOX 4 BOX 5 BOX 6 BOX 7 BOX 1 **BDF** Example: NOTE: One option per box BOX 1 BOX 2 BOX 3 BOX 4 BOX 5 BOX 6 BOX 8 **BDF** 11GGZ3 -CG5 D5 14 = BDFP11GGZ3CG5VD514 BOX 1 BOX 2 BOX 3 BOX 4 **Filtration** Configuration **Particulate Filtration Coalescing Filtration** CG5 = C125GZ5V**BDF** P = Panel Mount $11GGZ1 = 1 \mu m$ Coalescing Element $11GGZ3 = 3 \mu m$ BOX 5 BOX 6 **Seal Material** Dirt Alarm®

BOX 7 BOX 8

D5 = Visual Pop-up, Manual Reset

Options Omit = Sight Glass (standard) U = Downstream Test Point T = Water-In-Fuel (WIF) sensor only I = WIF sensor w/ remote mount light indicator H = Coalescing sump heater S5 = 5 gal. sump tank* S20 = 20 gal. sump tank* AWD5 = Auto. water drain w/ 5 gal. remote tank*

V = Viton®

14 = 14 gpm 120VAC 60Hz Single-Phase 25 = 25 gpm 120VAC 60Hz Single-Phase 16 = 16 gpm Air Driven Pump 25A = 25 gpm Air Driven Pump

Pump Sizing and Configuration

AWD20 = Auto. water drain w/ 20 gal. remote tank*
*only to be used in applications above 32°F (0°C)

Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171

Particulate Elements	DHC(g)	β_{x} (c) ≥ 200	β_{x} (c) ≥ 1000
11GGZ1V	172	<4.0	4.2
11GGZ3V	148	<4.0	4.8

Coalescing Element	Pressure Side Coalescing		
	Max Flow	Single Pass Water Removal Efficiency	
C125GZ5V	25 gpm	≥ 95%	

Note:

Based on ULSD15 with 27 Dynes/cm surface tension and 0.25% (2500) water injection

Particulate Element

Flow Direction: Outside In

Element Nominal Dimensions: 5.0" (27 mm) O.D. x 11" (279 mm) long

Coalescing Element

Flow Direction: Inside Out

Element Nominal Dimensions: 5.0" (27 mm) O.D. x 12" (305 mm) long

Fluid Compatibility

Fuel Oils

- ULSD15, low sulfur diesel and high sulfur diesel
- Biodiesel blends
- Synthetic diesel and blends
- No. 2 fuel oil and heating oil

*Coalescing Elements Patent-Pending



25 or 70 gpm |CF

95 or 275 L/min



BDC

Applications







UNLOADING





HIGH-FLOW FUEL

Application Introduction:

The Reason for Better Bulk Fuel Filtration

The BDC provides exceptional single pass or kidney loop diesel particulate filtration and continuous water removal. All 3 filters combine Schroeder's fully synthetic media and patent-pending fuel water separation technology. The BDC is ideal for fuel maintenance operations.

Features and Benefits

- Great for kidney loop clean-up and single pass transfer of diesel fuel in larger storage tanks
- Incorporates a bag element pre-filter, available from 1 to 200 micron, for gross removal of microbial bloom contamination and rust
- Fuel and water separation media technology in a three-phase element construction for high efficiency, single-pass removal of emulsified and free-water in Ultra-low Sulfur Diesel (ULSD) and biodiesel fuels
- Designed because prior generation coalescing methods no longer provide high-efficiency separation in ULSD and biodiesel
- Real time fuel condition monitoring can be achieved while using the supplied test points and one of our contamination sensing products
- Pump motor is 115VAC with re-settable overload and 7' power cord for 25 gpm models and available as 220V Single Phase, 230V Three Phase, or 460V Three Phase for 70 gpm models
- Helps protect expensive, vital engine components against failures caused by contaminated fuel



Model no. of filter in photograph is: BDC39QPMLZ3VAVM

Markets



INDUSTRIAL



MOBILE **VEHICLES**



MARINE



MINING



AGRICULTURE



POWER GENERATION



COMMON RAIL INJECTOR SYSTEMS



FLEET





BULK FUEL FILTRATION



Filter Housing Specifications

Flow Rating: Up to 25 gpm (95 L/min) or 70 gpm (265 L/min) for ULSD15 & biodiesel blends

Temperature Range: 32°F to 150°F (0°C to 66°C) standard and with AWD option

-20°F to 150°F (-29°C to 66°C) with heater option

Bypass Indication: Particulate Filter **Coalescing Filter**

> Particulate: 15 psi (1.03 bar) Coalescing: 25 psi (1.7 bar)

Bypass Valve Cracking: Particulate Filter **Coalescing Filter**

> Particulate: 20 psi (1.37 bar) Coalescing: 30 psi (2 bar)

Materials of Construction: Porting Base: Anodized Aluminum

Cap: Plated Steel

Bag Housing: 304 Stainless Steel

Particulate Filter Housing: Epoxy Paint w/ High-phos Electroless Nickel Plating

(Standard)

Coalescing Filter Housing: Epoxy Paint w/ High-phos Electroless Nickel Plating (Standard)

Weight: 25 gpm model - 785 lbs. (356 kg), 70 gpm model - contact factory

Element Change Clearance: 33.8" (858 mm)

Operating Frequency*: 60 Hz

Operating Phase*: Single

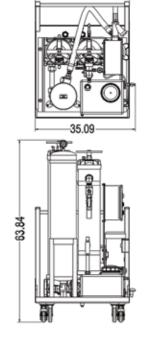
Full Load Amperage 13.4 A @ 115 VAC @ Operating Voltage*: 7.2-6.7 A @ 208-230 VAC

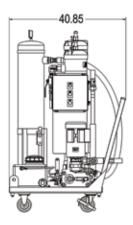
Service Factor Amperage 15.2 A @ 115 VAC @ Operating Voltage*: 8.1-7.6 A @ 208-230 VAC

33.00

*For 25 gpm models only. For electrical on 70 gpm models, Contact Factory.

AWD Version





Dimensions shown are inches [millimeters] for general information and overall envelope size only. For complete dimensions please contact Schroeder Industries to request a certified print.



Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171

Particulate Elements	DHC	β_{x} (c) ≥ 200	β_{x} (c) ≥ 1000
39QPMLZ1V	1485 grams	<4.0	4.2
39QPMLZ3V	1525 grams	<4.0	4.8

Pressure Side Coalescing				
Max Flow	Single Pass Water Removal Efficiency			
70 apm	> 99 5%			

Note:

Coalescing Element

C396Z5V

Based on ULSD15 with 27 Dynes/cm surface tension and 0.25% (2500 ppm) water injection

Coalescing Element

Flow Direction: Inside Out

Element Nominal Dimensions: 6.4" (163 mm) O.D. x 39.4" (1001 mm) long

Particulate Element

Flow Direction: Outside In

Element Nominal Dimensions: 6.0" (150 mm) O.D. x 37.8" (960 mm) long

Part Number	Description	Micron Rating	Elements Per Case
C396Z5V	Coalescing Element	5 μm	1
39QPMLZ1V	Particulate Element	1 μm	1
39QPMLZ3V	Particulate Element	3 μm	1
PEF5P2PH	Bag Element	5 μm	50
PEF25P2PH	Bag Element	25 μm	50
PEF50P2PH	Bag Element	50 μm	50
PEF100P2PH	Bag Element	100 μm	50

Element Particulate Performance Information_{BDA}

Element Water **Coalescing Performance** Information Particulate and Coalescing **Elements Sold**

Highlighted product eligible for QuickDelivery

with Cart



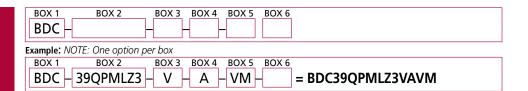
Optional Replacement co **Elements**

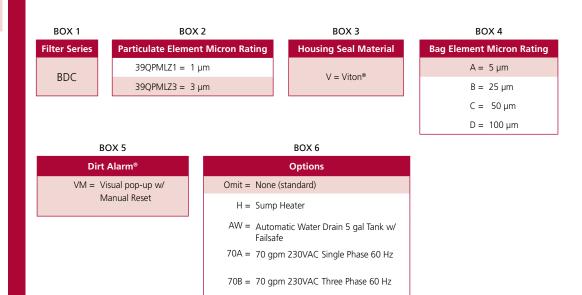
Highlighted product eligible for **QuickDelivery**



Filter Model Number Selection

Highlighted product eligible for wickDelivery





NOTES:

Optional AWD is for use only >32°F (0°)

For 50Hz applications, contact factory

Box 3. Viton® is a registered trademark of DuPont Dow Elastomers

Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171

Particulate Elements	DHC	β_x (c) ≥ 200	β_{x} (c) ≥ 1000
39QPMLZ1V	1485 grams	<4.0	4.2
39QPMLZ3V	1525 grams	<4.0	4.8

70C = 70 gpm 460VAC Three Phase 60 Hz

Coalescing Element	Pressure Side Coalescing		
	Max Flow	Single Pass Water Removal Efficiency	
C396Z5V	70 gpm	> 99.5%	

Note:

Based on ULSD15 with 27 Dynes/cm surface tension and 0.25% (2500 ppm) water injection

Coalescing Element

Flow Direction: Inside Out

Element Nominal Dimensions: 6.4" (163 mm) O.D. x 39.4" (1001 mm) long

Particulate Element

Flow Direction: Outside In

Element Nominal Dimensions: 6.0" (150 mm) O.D. x 37.8" (960 mm) long

Fluid Compatibility

Element

Part Number Selection

Highlighted product eligible for Quick Delivery

Fuel Oils

- ULSD15, low sulfur diesel and high sulfur diesel
- Biodiesel blends
- Synthetic diesel and blends
- No. 2 fuel oil and heating oil